

## Program Information Sheet

### Program Name

Climate Variability and Predictability (CVP) Program

### Program Mission

The Climate Variability and Predictability (CVP) Program supports research that enhances our process-level understanding of the climate system through observation, modeling, analysis, and field studies. This vital knowledge is needed to improve climate models and predictions so that scientists and society can better anticipate the impacts of future climate variability and change. The CVP Program sits within the Earth System Science and Modeling (ESSM) Division of the NOAA Office of Oceanic and Atmospheric Research (OAR) Climate Program Office (CPO). CVP is a critical component of the integrated research enterprise at CPO and maintains important connections to the other CPO program areas, such as Ocean Observations and Monitoring Division (OOMB) and MAPP (Modeling, Analysis, Predictions and Projections).

To achieve its mission, the CVP Program supports research carried out at NOAA and other federal laboratories, NOAA Cooperative Institutes, and academic institutions. The Program also coordinates its sponsored projects with major national and international scientific bodies including the World Climate Research Programme (WCRP), the International and U.S. Climate Variability and Predictability (CLIVAR/US CLIVAR) Program, and the U.S. Global Change Research Program (USGCRP). The CVP program sits within NOAA's Climate Program Office (<http://cpo.noaa.gov/CVP>).

### Focus for FY19

#### **Competition 2: CVP-Observing and Understanding Upper-Ocean Processes and Shallow Convection in the Tropical Atlantic Ocean**

In FY19, CVP is interested in studies focused on observing, understanding, and/or process modeling of upper ocean processes and air-sea interactions in the Northwest Tropical Atlantic as part of the Atlantic Tradewind Ocean-Atmosphere Mesoscale Interaction Campaign<sup>1</sup> (ATOMIC, US-led research) and the EUREC4A Ocean-Atmosphere (EUREC4A-OA, European-led research) field campaigns. The key purpose of these studies and of ATOMIC/EUREC4A-OA is to examine air-sea interactions which include, but are not limited to, upper ocean processes, ocean boundary layers, mesoscale ocean eddies, ocean interactions with the atmosphere, as well as lower atmospheric boundary layer processes and their influence on the ocean.

### Funding for FY19

It is anticipated that there will be \$1.5M available in FY19 for **Competition 2: CVP-Observing**

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<sup>1</sup> Please see the International CLIVAR endorsement: <http://www.clivar.org/news/atomic-and-eurec4a-oa-have-been-endorsed-clivar>

**and Understanding Upper-Ocean Processes and Shallow Convection in the Tropical Atlantic Ocean.** It is anticipated that most awards will be at a funding level between \$150,000 and \$300,000 per year for up to 3 years, depending on the availability of funding. Projects will start either in FY19 or FY20, depending on the needs of the project and the availability of funding.

## **Competition Information**

### **Competition 2: CVP-Observing and Understanding Upper-Ocean Processes and Shallow Convection in the Tropical Atlantic Ocean**

The Climate Variability and Predictability (CVP) Program supports research that enhances our process-level understanding of the climate system through observation, modeling, analysis, and field studies. This vital knowledge is needed to improve climate models and predictions so that scientists and society can better anticipate the impacts of future climate variability and change.

Shallow convection processes in the Tropical Atlantic Ocean are driven by processes in the upper ocean, lower boundary layer of the atmosphere, and exchanges across the air-sea interface. Observing and understanding of the coupling of the ocean and atmosphere during intensive observation field campaigns offers a unique opportunity to evaluate and improve the emerging generation of high resolution coupled models, which are capable of resolving phenomena on scales of a few kilometers.

The Atlantic Tradewind Ocean-Atmosphere Mesoscale Interaction Campaign<sup>2</sup> (ATOMIC, US-led research) and the EUREC4A Ocean-Atmosphere (EUREC4A-OA, European-led research) field campaigns will take advantage of the complementary existing international EUREC4A intensive atmospheric field campaigns taking place during 6 weeks in January-February 2020. Jointly, these three campaigns are focused on the Northwest Tropical Atlantic near Barbados. ATOMIC/EUREC4A-OA will focus on ocean-atmosphere interactions at the mesoscale, and their relation to the regional-scale ocean boundary layers, air-sea interactions and atmospheric shallow-convection. ATOMIC/EUREC4A-OA will add airborne and shipborne observing systems that complement EUREC4A. The shipborne work will focus on the role of eddies, barrier layers, and surface forcing on oceanic boundary-layer mixing. The oceanic work will benefit from and require the surface forcing information provided by the large scale atmospheric array and from direct flux observations from ships.

In FY19, CVP is interested in studies focused on observing, understanding, and/or process modeling of upper ocean processes and air-sea interactions in the Northwest Tropical Atlantic as part of the ATOMIC/EUREC4A-OA field campaigns. Air-sea interactions include, but are not limited to, upper ocean processes, ocean boundary layers, mesoscale ocean eddies, ocean interactions with the atmosphere, as well as lower atmospheric boundary layer processes and their influence on the ocean.

Interactions, partnerships, or collaborations with NOAA laboratories, cooperative institutes, and

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<sup>2</sup> Please see the International CLIVAR endorsement: <http://www.clivar.org/news/atomic-and-eurec4a-oa-have-been-endorsed-clivar>

centers are encouraged.

## Data Archiving

### Data Management Guidance

The Responsible NOAA Official for questions regarding this guidance and for verifying accessibility of data produced by funding recipients: Sandy Lucas, [sandy.lucas@noaa.gov](mailto:sandy.lucas@noaa.gov)

Data Accessibility: The CVP Program requires that public access to grant/contract-produced data be enabled in one of the following ways (select one):

- ☐ Funding recipients are planning to submit data to NOAA National Centers for Environmental Information (NCEI), which will provide public access and permanent archiving<sup>3</sup>. Point of Contact for NCEI is Nancy Ritchey (Nancy.Ritchey@noaa.gov)
- ☐ Data are to be submitted to an International Council for Science (ICSU) World Data System facility: <https://www.icsu-wds.org/community/membership/regular-members>
- ☐ An existing publicly accessible online data server at the funded institution is to be used to host these data (describe in proposal).
- ☐ Data are to be submitted to a public data repository appropriate to this scientific domain (describe in proposal).
- ☐ Proposal may request permission not to make data publicly accessible (proposal to explain rationale for lack of public access, and if funded approval to be obtained from Responsible NOAA Official listed above).
- ☐ Archival of data at an established Cloud Computing facility, if cost effective and reliable

### Technical recommendations:

The CVP Program requires the following data format(s), data access method(s), or other technical guidance:

- ☐ Data must be made available in a common machine-readable non-proprietary format with appropriate metadata and clear labels and descriptors. Use of netCDF is encouraged.
- ☐ Data should be available via public and discoverable data portals, as described above.
- ☐ At a minimum, investigators should plan to archive and make available modeling data used in producing any figures in publications from research supported by their grants, as well as data that support conclusions reached in papers or stated publicly. Only those data which are necessary for demonstrating reproducibility of published results need be archived and made public unless otherwise required as part of the solicitation.
- ☐ In situ observational data collected during the field campaign should be made freely available to the public either 2 years after collection and validation or at the time of publication, whichever is sooner.
- ☐ Model data should be made available for at least 3 years after it is initially published or made otherwise publicly available.

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<sup>3</sup> NCEI supports the creation of adequate metadata and data ingest into long term repository holdings using tools such as Send2NCEI ([www.nodc.noaa.gov/s2n](http://www.nodc.noaa.gov/s2n), for small volume, one-time only data collections) and Advanced Tracking and Resource tool for Archive Collections or ATRAC ([www.ncdc.noaa.gov/atrac](http://www.ncdc.noaa.gov/atrac), for recurring and/or large volume data collections).

Resources:

Proposals are permitted to include the costs of data sharing and/or archiving in their budgets within solicitation specified proposal cost limit. Proposed methods and approaches should use reasonable means to minimize data management costs.

**Program Contact information:**

For additional program announcement information, investigators should contact the following CVP Competition Manager: Sandy Lucas (Sandy.Lucas@noaa.gov, 301-734-1253)

**Letters of Intent should be submitted directly to the Competition Manager.**